

ARM Nauru Research Station

Site Visit 0403N Report

Visit Duration: 11 March to 16 March

Nauru Island, Republic of Nauru

SV 0403N

Site:Nauru	Proposed Dates on Site: March 11-16
Team Members: Troy Culgan Rex Pearson	Ship or hand carry prior to SV: WSI Parts MMCR TWTA SMET Aspirator Fan
	<p>Safety: Major Hazards: Caustic chemicals(KOH), Explosive gas(H2), AC electricity.</p> <p>Hazard Controls:BOM Electrolyser Handbook, BM Electrolyzer Operations/Maintenance Training, ASNZS 4836/2001-Safe Working on LV Electrical Installations, 2 man rule.</p>

Site Tasks

Priority	System	Date Completed (dd/Month)	Service Time in Hours	Tasks/Assoc Hazards-Controls
For each priority item insert new line(row) for each date/time entry				
1	H2GEN			H2Gen maintenance/ KOH,H2,Electrical- BOM Handbook, ASNZS 4836/2001, 2 man rule
		11-Mar	4	H2Gen maintenance preparation
		12-Mar	10	H2Gen maintenance completed. Spares inventory still to be completed.
		14-Mar	2	Spares inventory completed and report sent
2	MMCR			Repair MMCR/ Electrical-ASNZS 4836/2001, 2 man rule
		11-Mar	5	Replace TWTA and reinstall waveguide. Restore system to a state ready to test.
				Applied power to MMCR and now have cloud responses from the unit. I am still getting an occasional bus lockup at the z hour when pop reschedules
		12-Mar	8	Continued fault finding on MMCR. Assistance provided by Tom/Ken from Noaa enabled us to monitor the IEEE488 bus to assist in fault finding. Both the Mux and the TWT are giving false responses to bus queries, these have been reduced by additional cooling of the Mux unit. It appears its 488 bus components are temperature sensitive. Internal fan in the mux is operating correctly.
		13-Mar	6	Continued fault finding on MMCR.
		14-Mar	4	Kevin widener confirmed the data from the MMCR was good. Continued looking into the bus errors and testing the spare muxes and ADC to determine what needs to be sent for repair.

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		15-Mar	4	Replaced mica moisture shields and O rings in MMCR waveguide. MMCR UPS (Best 700A) failed and is not able to hold the load reliably. A temporary solution was done using the spare Liebert UPS. Documentation on how to operate was drafted and sent to TWPOPS and Kevin Widener. Failed UPS was model Best FE700VA serial number FE700V03664.
		15-Mar	2	WSI/MMCR spares cupboards cleaned out and reorganized
3	WSI			Repair WSI/ Electrical- ASNZS 4836/2001
		12-Mar	3	Commenced fault finding on the WSI.
				Opened unit to check filter wheels and noticed the internal fan was not running. Filter wheels had no resistance to being turned. This indicated a loss of power to the assembly. Fault was traced to the power switch on the Sensor control panel. When power was restored the filter wheels moved into position but the fan did not operate. Fan unit was replaced - it is the same unit that is used on the MMCR Mux - Handy that... The WSI is back in operation under test.
		13-Mar	0.5	Checked dome pressures, filter operation
		14-Mar	0.5	Downloaded data from the WSI and checked images
4	TRACKER			Replace K&Z Sunsensor & Confirm Correct Shading and Operation/ Electrical- ASNZS 4836/2001
		13-Mar	3	Replaced sun sensor, checked initial alignment - will check further over the next few days. Also found the B/W radiometer fan noisy and replaced while tracker was off. Tracker taken off line ~0100z and restored to service 0230z
				Old sunsensor serial number 950052 - new sunsensor installed 040140
		14-Mar	0.5	Checked alignment during the day
		15-Mar	0.5	Checked alignment during the day
5	AERI			Repair the HBB controller fan. Afterwards clean the BB controller filters and turn off the ABB power switch. The replacement "spare" temp sensor cable should be swapped in using the same arrangement as the existing cable. Electrical- ASNZS 4836/2001
		13-Mar	3	Repaired HBB fan, cleaned filters and checked the switch settings. HBB power supply now at 305k degrees
				Spare cable has not arrived
6	AWS			AWS maintenance/ Min Electrical 12VDC
		13-Mar	6	AWS maintenance/calibration completed
7	ES&H			Perform general site safety inspection and locate site safety manuals, first aid kit, and defibrillator. / None
		13-Mar	0.5	Found safety rail on skyrad unsafe, support pillars are rotten. Measured up required timber and have asked Andrew to purchase so we can construct new safety rail
		14-Mar	6	Removed old skyrad safety rail, constructed new rail and added an end rail to prevent walking off the end of the stand
		15-Mar	0.5	Smet tower weight assembly rusting badly. This should be replaced as soon as possible.
		15-Mar	1	First aid equipment checked

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8	DS			Change instrument laptops to include Abouttime as the time client and configure for both the Time server and collector to act as the time servers./None
		11-Mar	0.5	MWR laptop configured to include collector as time source
		12-Mar	2	Abouttime software added to BBSS, Sam, MWR, MPL and Ceilometer laptops and configure Abouttime to poll both NTP and collector as time sync sources
		13-Mar	1	Completed updates and checked virus updates on observer computers
9	OTHER			Review shipping procedures with observers/ None
		12-Mar	0.5	Showed Equina how to access TWP inventory system so she could get serial numbers/price for instruments
		15-Mar	2	Additional training on shipping instructions given
10	VANS			Replace Track Lighting/ None
		11-Mar	1.5	Additional lights installed in I Van and bulbs replaced with fluorescent style bulbs - giving much brighter light output
11	Spare UPS			Unpack/wire and program spare Liebert UPS units/Electrical-ASNZS 4836/2001
		12-Mar	0.25	Liebert UPS units unpacked and stored in D Van
		14-Mar	3	Setup and programmed spare Liebert UPS. Installed into I Van and connected to the network so it can be remotely monitored
		15-Mar	2	Spare UPS used to run MMCR due to MMCR UPS failing. Procedure documented on how to swap out the unit if required.
12	SatPhone			
		12-Mar	0.5	Removed security block and unable to dial out. Requested Cheryl check account status
		15-Mar		Bill paid for sat IME 76EB510297D88. Unit returned to service.
13	A/C Units			
		13-Mar	1	A/C unit number 1 in the I Van was not cooling. The power lamp was flashing 5 times over a 5 second period then a pause of around 3 seconds. We power down the unit and left it off for 5 minutes then turned it on again. The power lamp was on solid but the unit was just blowing hot air. We turned it off and turned on unit 2 was started to operate correctly. For information - the pipes on the outdoor unit on unit 1 were showing no signs of condensation and were not cold.
				Photo's of unit included in email
		15-Mar	2	Outdoor unit of AC 1 in I Van changed out with replacement unit. Dave Groom was consulted and he was happy for us to change out the unit. Robroy assisted us in the change out and received training on the changeout procedure and power removal/lockout/tagout procedures.
14	Radiometer			
	Fans	15-Mar	1	Radiometer fan on PIR1 stopped. Replaced fan and tested. Fan replacement was completed by approximately 2000z.
15	RBL			Train observers in correct RBL launch procedures/H2

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		14-Mar	3	During the day launch it was observed that the balloon/sonde did not launch cleanly. We worked with the observers to check how the sonde was being connected to the balloon. It looked like the teather string was unwinding too soon into the launch. This was traced to the method of connection of the sonde - the unwinder was releasing from the sonde because it was not being held in place correctly by the Velcro strap. We went thru the correct procedure with Rob and Henry and did a second launch with a faulty sonde to prove the procedure. I have told the observers they MUST use the correct procedure.
		15-Mar	1	Additional RBL launch training
16	Emergency lights			Check emergency light operation/ Electrical-ASNZS 4836/2001
		14-Mar	1	D Van emergency light is faulty. Will need to be replaced.
				E Van emergency light is faulty. Will need to be replaced.
				I Van unit does not function - we did not pull it apart and check it but would suggest it be replaced
17	Phone bell			Add external ringer for phone so it can be heard outside
		15-Mar	1	Installed external ringer and wired into the VoIP phone in E Van
18	SHIPPING			List items to be shipped following visit/ None
				Ship damaged sun-sensor to SGP
				Ship Brusag Intra15 tracker to Darwin to be modified to take 3 radiometers
				Ship 1 Faulty MMCR mux to SGP - IEEE488 bus interface faulty
				Ship MMCR Mux and ADC spares to Darwin
				Ship MMCR OS2 computer to Darwin
				Ship faulty APC interface card to SGP
				Ship TSI computer to Darwin
				BOM ship fluorescent bulbs for replacment in RBL.
				Ship 2 broken A/C units to A/E smith.
19	FUTURE NEEDS			List items needed for future visits (spares, etc)/ None
				Additional fluorescent bulbs for track lighting. (Email sent to Monty)
				Bagged desiccant for the WSI camera assembly
				Camera lens cleaning cloths for the WSI
				Camera lens cleaning solution
				Imperial allen key set
				3 x Emergency light units - 115V/50Hz operation
				UPS for MMCR - Model Best FE700VA
				2 RBL lamps Osram Dulux L 36/21 for H2 Genset spares
				2 meters 1/4" tubing for H2 Genset spares